

Day 6 Hw: Standard form to vertex form

Put each of the following quadratics into vertex form by completing the square.

1)  $p^2 + 14p - 38 = y$

$$\frac{14}{2} = 7 \rightarrow 7^2 = 49$$

$$y = (p^2 + 14p + 49) - 38 - 49$$

$$y = (p + 7)^2 - 87$$

3)  $a^2 + 14a - 51 = y$

$$\frac{14}{2} = 7 \rightarrow 7^2 = 49$$

$$y = (a^2 + 14a + 49) - 51 - 49$$

$$y = (a + 7)^2 - 100$$

5)  $x^2 + 6x + 8 = y$

$$\frac{6}{2} = 3 \rightarrow 3^2 = 9$$

$$y = (x^2 + 6x + 9) + 8 - 9$$

$$y = (x + 3)^2 - 1$$

7)  $x^2 + 14x - 15 = y$

$$\frac{14}{2} = 7 \rightarrow 7^2 = 49$$

$$y = (x^2 + 14x + 49) - 15 - 49$$

$$y = (x + 7)^2 - 64$$

2)  $v^2 + 6v - 59 = y$

$$\frac{6}{2} = 3 \rightarrow 3^2 = 9$$

$$y = (v^2 + 6v + 9) - 59 - 9$$

$$y = (v + 3)^2 - 68$$

4)  $x^2 - 12x + 11 = y$

$$\frac{-12}{2} = -6 \rightarrow -6^2 = 36$$

$$y = (x^2 - 12x + 36) + 11 - 36$$

$$y = (x - 6)^2 - 25$$

6)  $n^2 - 2n - 3 = y$

$$\frac{-2}{2} = -1 \rightarrow -1^2 = 1$$

$$y = (n^2 - 2n + 1) - 3 - 1$$

$$y = (n - 1)^2 - 4$$

8)  $k^2 - 12k + 23 = y$

$$\frac{-12}{2} = -6 \rightarrow -6^2 = 36$$

$$y = (k^2 - 12k + 36) + 23 - 36$$

$$y = (k - 6)^2 - 13$$

Day 7 Hw: Complete the square

Rewrite each equation in vertex form.

1.  $y = x^2 + 8x + 12$

Vertex Form: \_\_\_\_\_

2.  $y = x^2 + 4x - 5$

Vertex Form: \_\_\_\_\_

3.  $y = x^2 - 12x$

Vertex Form: \_\_\_\_\_

4.  $x^2 - 10x = 24$

Vertex Form: \_\_\_\_\_